

Mating disruption field trials on *Plodia interpunctella* (Hubner)

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Abstract

After four decades of using pheromone-baited traps for monitoring populations of stored product insects, a new method to control stored product moths using mating disruption with pheromones is being implemented into pest management programs. The pheromone for Indianmeal moth, Mediterranean moth (*Ephestia kuehniella*), Tobacco moth (*Ephestia ellutella*), and the Almond moth (*Ephestia cautella*), Z, E- 9, 12 tetradecadienyl acetate was registered with the US EPA as a bio-insecticide in 2007. This pheromone-based product is exempt from food tolerance for residues if the dose does not exceed 3.5 grams active ingredient (ai) 30m²/year. This MD study examines the use of Allure MD on Indianmeal moths (*Plodia interpunctella*) in five field studies: Food pantry, Seed warehouse, Nut processing building, Organic food storage and processing, and a home. The various stored product storage areas were monitored before, during, and after the MD treatments. Female stored product moths were captured to determine if their eggs were fertilized by examining the spermatophores in bursa sacs. The male Indianmeal moths behavior was dramatically changed with the MD treatments and the pheromone trap captures of male moths was reduced significantly. The results of these five field studies, cost comparisons with traditional insecticide treatments, female fertility, and the changed behavior of male Indianmeal moths will be discussed.

Keywords: *Plodia interpunctella*, *Ephestia kuehniella*, Pheromone, Mating disruption (MD)